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PolyUGTs

KITS FOR SYNTHESIS OF GLUCURONIDES

PolyUGTs biocatalysis kits

For synthesis of glucuronides

PolyUGTs metabolite kits can be used to screen for, and scale-up production of, a variety of glucuronides of drugs, agrochemicals and other small molecules.

Screening kits contain 11 isoforms for clients to use in their own labs. Hit reactions can be scaled up using scale-up vials to obtain material for structure elucidation by NMR spectroscopy to pinpoint the position of attachment, biological activity assessment, validation of bioanalytical sample handling, and *in vitro* drug-drug interaction testing. For acyl glucuronides, the kits provide a method for synthesizing material for analysis to determine the acyl migration related half-life.

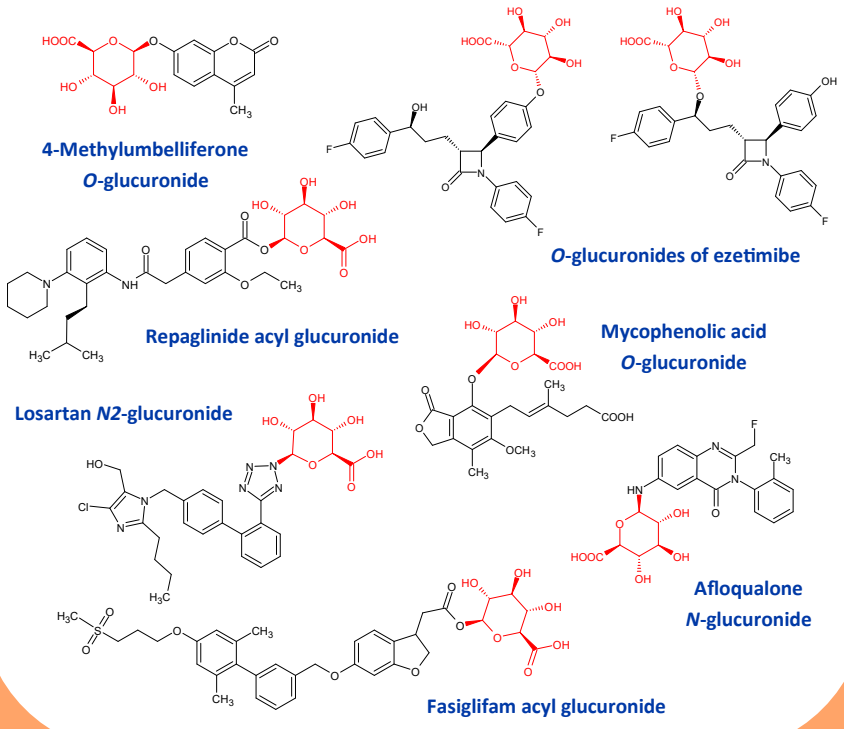
Proven capabilities

Hypha's PolyUGT enzymes are mined from selected biotransforming strains in Hypha's microbial collection, expressed in *E.coli*, and subsequently purified. The enzymes provided in the screening kit have been tested for biocatalytic activity against a number of substrates known to be subject to glucuronidation. This includes glucuronidation of alkyl and phenolic hydroxyls for *O*-glucuronides, carboxylic acids for acyl-glucuronides, as well as aromatic nitrogen-containing systems for *N*-glucuronidation. Glucuronidation of some non-aromatic alkyl *N*-moieties is also observed.

Acyl glucuronides

An optional pH reduction buffer vial is included in the kit for use when an acyl-glucuronide is anticipated. This will reduce the reaction pH from 7.4 to around pH 6.5 to help reduce the formation of any acyl migration isomers.

Selected examples of glucuronides produced by isoforms in Hypha's PolyUGTs kit

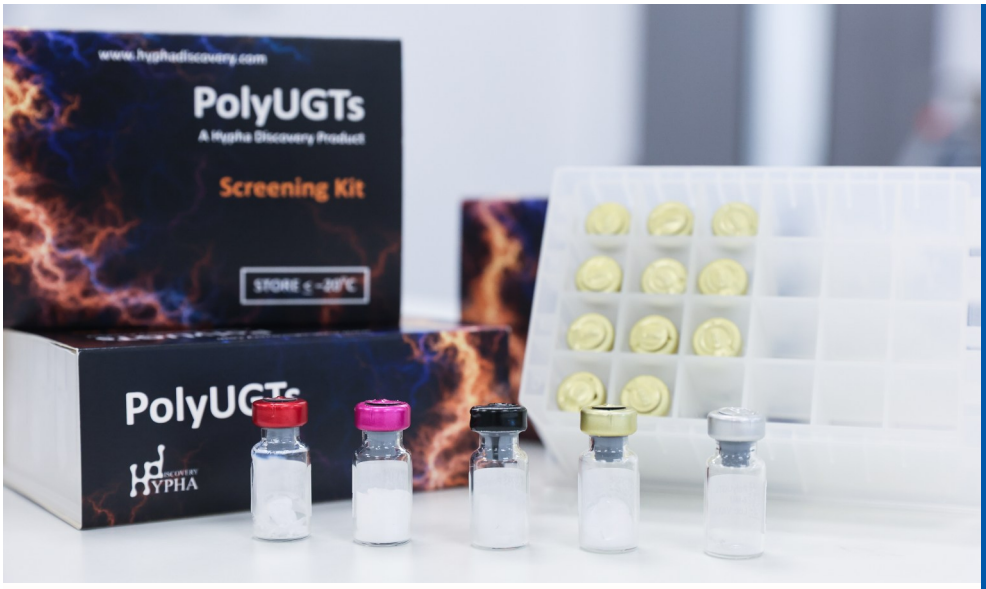


KEY FEATURES OF POLYUGTs

- **Makes glucuronides for a wide range of substrate types**
- **Comes with all reagents needed, including UDPGA co-factor, a control compound, a 24-well reaction plate and seal**
- **Easy-to-use - all reagents are provided as lyophilized powders - just add water and gently shake**
- **Readily scalable, either in-house or outsource to Hypha**

For more information or to place an order email:

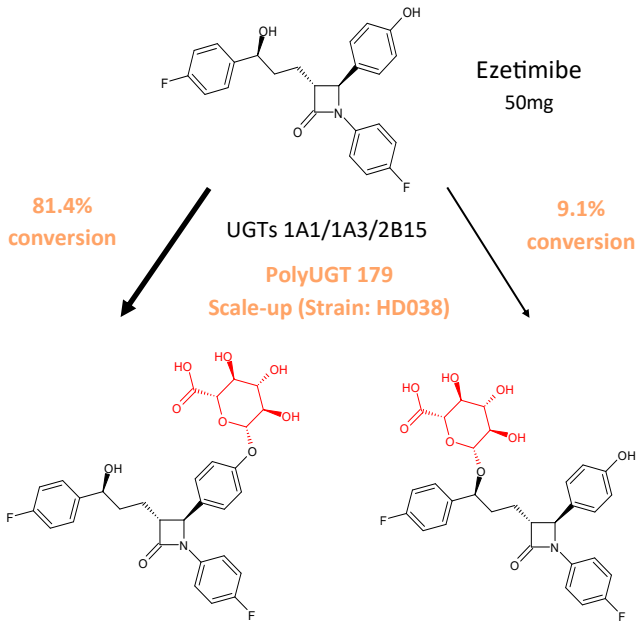
enquiries@hyphadiscovery.com



Scalability

For accessing larger quantities of glucuronides, Hypha can scale-up reactions using bulk enzyme preparations or via streptomycete clones containing the UGT of interest. Our selected host strains provide the UDPGA to the reaction without the need to add expensive exogenous UDPGA.
We can also process and purify metabolites from the reaction extracts and undertake structure elucidation using cryoprobe NMR spectroscopy.

Use of PolyUGTs enzyme to make glucuronides of ezetimibe



Ezetimibe phenoxy glucuronide
Major human active metabolite

Two *O*-glucuronides of ezetimibe were purified and the structures confirmed by NMR spectroscopy, reflecting what was observed in HLM incubations. Ezetimibe phenoxy glucuronide is unusual in that it is pharmacologically active and is more potent at inhibiting cholesterol absorption in the gut than the parent drug. Repeated enterohepatic circulation results in a long duration of action.

KIT CONTENTS

- 11 PolyUGT isoforms
- Uridine diphosphate glucuronic acid (UDPGA)
- Formulation reagent to aid the solubilization of test compounds of poor aqueous solubility
- Positive control substrate (4-methylumbelliferone)
- Extra enzyme vial (PolyUGT 216) for use with control compound
- pH reduction buffer vial for optional use with acyl-glucuronides

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HYPHA DISCOVERY

Metabolite Experts

PolyUGTs PRODUCTS

Screening kit

Quickly generate glucuronides of drugs and agrochemicals in-house at analytical scale using a panel of purified recombinant UGT enzymes. UDPGA co-factor and control compound included.

Scale-up vials

Rapidly scale up and purify screening reactions in-house at milligram scale for structure elucidation and further testing using resupplied UGT enzymes. UDPGA co-factor and control compound included.

Bulk amounts

Access larger quantities of glucuronides through larger scale reactions at Hypha using bulk enzyme preps or whole cell biotransformation using recombinant streptomycete clones

Contact us

For more information or to place an order

email enquiries@hyphadiscovery.com

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